

Immigration and poverty in the United States

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The proportion of U.S. residents born in another country increased from 5 percent to 12 percent between 1970 and 2003.¹ International immigration accounted for over one quarter of net population growth during this period. Recent immigrants are heavily concentrated among groups with either extremely low or relatively high levels of formal educational attainment, the group at the low end being particularly large. Immigration could affect the U.S. poverty rate in two ways. First, immigrants may have a direct effect on the poverty rate, since poverty rates among the foreign born tend to be high. This direct effect can be exacerbated or mitigated over time depending on the extent to which immigrants acquire experience in U.S. labor markets and progress up the wage ladder. Second, immigration changes the relative numbers of workers with different levels of education and other labor market skills, which may in turn influence the wages and employment of natives. In particular, recent immigration has increased the number of workers with very low levels of educational attainment. How much this change affects the poverty rate depends on the sensitivity of native employment and earnings to the influx of competing immigrant labor. The indirect effects on poverty rates are likely to vary across racial and ethnic groups. In particular, African Americans, native-born Hispanics, and the native-born children of prior immigrants tend to be less educated on average and thus may be more likely to be affected by competition

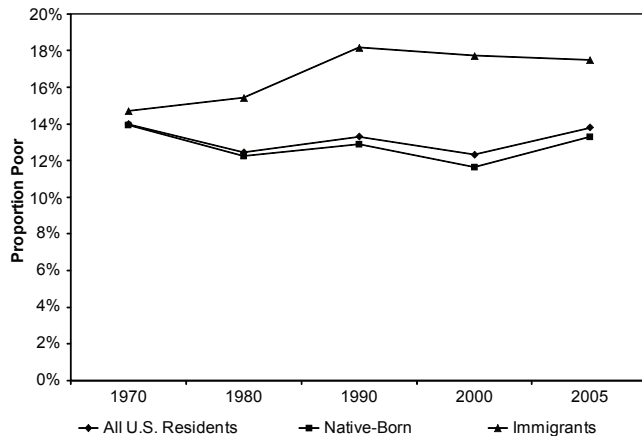


Figure 1. Proportion in poverty, all U.S. residents, native-born residents, and immigrants, 1970 to 2005.

with immigrants. In this article, we examine the likely direct and indirect effects of immigration on poverty rates.

Basic poverty trends

Poverty in the United States declined slightly between 1970 and 2005 (Figure 1).² Declines were notable for the native-born, whereas poverty among immigrants increased. Although the poverty rate of immigrants from many regions has declined, the distribution of the U.S. immigrant population by origin has shifted decisively towards source countries that generate immigrants who are more likely to be poor.

We find that poverty rates among immigrant groups decline quite quickly with time in the United States (Figure 2). Although the initial level of poverty among recent arrivals has increased in recent decades, the declines in poverty observed in subsequent censuses suggests that the poorer immigrants of the most recent wave either exit poverty at a fairly rapid rate or emigrate out of the country. Immigrant-native disparity in the incidence of poverty also declines with immigrants' time in the United States.

Compositional effects of immigration on the poverty rate

The combination of increased poverty among immigrants and a higher ratio of immigrants to the total population must add to the national poverty rate. In this section, we assess by how much. The size of this compositional effect of immigration on poverty is necessarily limited by the size of the overall foreign-born population. As immigrants still compose a minority of the U.S. population, and poor immigrants are a minority of that minority, the compositional effect cannot be large. To assess this, we decompose the change in the national poverty rate between 1970 and 2005 into two components:

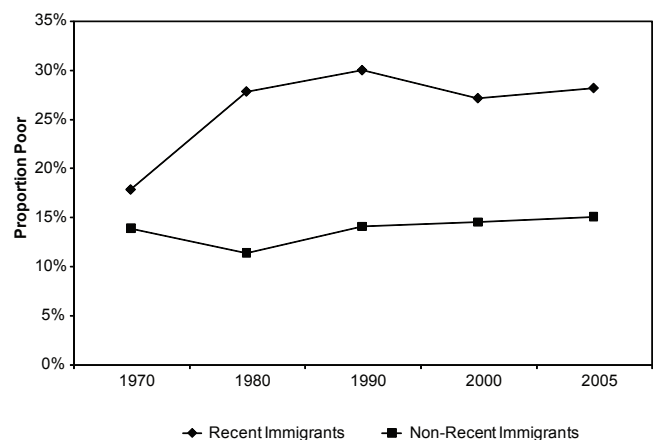


Figure 2. Poverty rates among recent immigrants (arrived within past 5 years) and non-recent immigrants (arrived more than 5 years ago).

the change attributable to shifts in the internal composition of the U.S. resident population across native and immigrant groups, and the change attributable to shifts in poverty rates occurring within these groups.

Table 1 presents these decompositions for various time periods.³ In nearly all periods, the change attributable to shifts in population shares between natives and immigrants has tended to increase poverty in the United States, but declines in poverty within groups have for the most part more than offset these increases. For example, between 1970 and 2005, the net change in the poverty rate was a decrease of just under one percentage point. We calculate that over this period the change in the population distribution between natives and immigrants added over one percentage point to the poverty rate, whereas changes in poverty rates within these groups subtracted about two percentage points, resulting in the net decline. The results are similar for all periods except for 2000 to 2005, when compositional changes tended to reduce poverty, holding all else constant, while changes in poverty rates within immigrant and native groups increased poverty, resulting in a slight net increase in the poverty rate. These decompositions suggest that the direct compositional effects of immigration on poverty are modest, especially so in recent periods.

Poverty among natives attributable to labor market competition with immigrants

The contribution of immigration to poverty analyzed in the previous section is purely arithmetic. To the extent that immigrants have higher poverty rates and immigrants are an increasing proportion of the resident population, the national poverty rate will increase. Beyond this compositional effect, immigration may also affect the national poverty rate of natives. To the extent that immigrants drive down the wages of natives with similar skills, increased immigration will contribute to native poverty. This effect may be exacerbated if natives respond to lower wage offers by working fewer hours.⁴ The economic forces behind this proposition are best illustrated with a simple model of wage determination in the overall economy. Suppose that all workers in the economy are exactly the same in that employers can perfectly substitute one employee—immigrant or native—for another. Also assume that the stock of productive capital (machinery, plant, and equip-

ment used in the production of goods and services) is fixed. Under these conditions, an increase in immigration increases the supply of labor in the national economy and lowers the wages and employment of native workers who now compete with immigrant workers. At the same time, total employment (immigrant plus native) increases, raising national output. In conjunction with lower wages, increased output translates into higher incomes accruing to the owners of capital.

This is a relatively straightforward story. Immigration increases national output, harms native labor, but enriches the owners of capital. In other words, immigration harms those “factors of production” with which it directly competes while benefiting those factors that it complements. Of course, the actual economy and the likely impacts of immigration operate within a far more complex model. Most conspicuously, in telling our simple story we assumed that employers could perfectly substitute the average immigrant worker for the average native worker. This is clearly unrealistic. Immigrants and natives differ along a number of dimensions that are likely of value to employers. Immigrants tend to have less formal education on average, with levels of educational attainment particularly low among Hispanic immigrants and many Southeast Asian immigrants. Immigrant and native-born workers are also likely to differ in their ability to converse in English. Immigrants also tend to be younger than natives, a fact suggesting that the average immigrant worker may have less labor market experience than the average native-born worker.⁵

Given such differences in skills, it is more likely the case that immigrants and natives are imperfect substitutes in production. That is, substituting immigrant for native workers is possible, but is limited by differences in skills. Moreover, the substitution possibilities likely vary across jobs according to the skill content of various occupations. In some instances, certain sub-groups of natives are likely to complement immigrant labor in production. That is to say, certain native workers are likely to be hired in conjunction with the hiring of immigrant workers. For example, Spanish-speaking laborers on a construction site may increase the demand for native-born bilingual Hispanics with enough education to serve in supervisory positions. As another example, an increase in the supply of low-skilled construction labor may increase the demand for architects, structural and civil engineers, skilled craftsmen, and workers in other such occupations whose labor constitutes important inputs in the construction industry.

The imperfect substitutability between immigrant and native workers in the United States is most readily demonstrated by comparing their distributions across educational attainment groups. Figure 3 shows the distributions of immigrants and native men and women, ages 18 to 64, across formal educational attainment levels for the year 2000. Although immigrants are more likely to hold advanced degrees than most of the native-born groups, the share of immigrant workers with extremely low levels of educational attainment is quite high relative to all native groups. A similar pattern is observed when comparing immigrant and native-born women.

Table 1
Changes in National Poverty Rates Attributable to Changing Population Composition and to Changes in Poverty Rates

| | Percentage Point Change in National Poverty Rate | Change Attributable to Changes in Population Shares | Change Attributable to Changes in Group-Specific Poverty Rates |
|--------------|--|---|--|
| 1970 to 2005 | -0.94 | 1.15 | -2.09 |
| 1980 to 2005 | 0.56 | 0.63 | -0.07 |
| 1990 to 2005 | -0.01 | 0.54 | -0.56 |
| 2000 to 2005 | 0.90 | -0.28 | 1.18 |

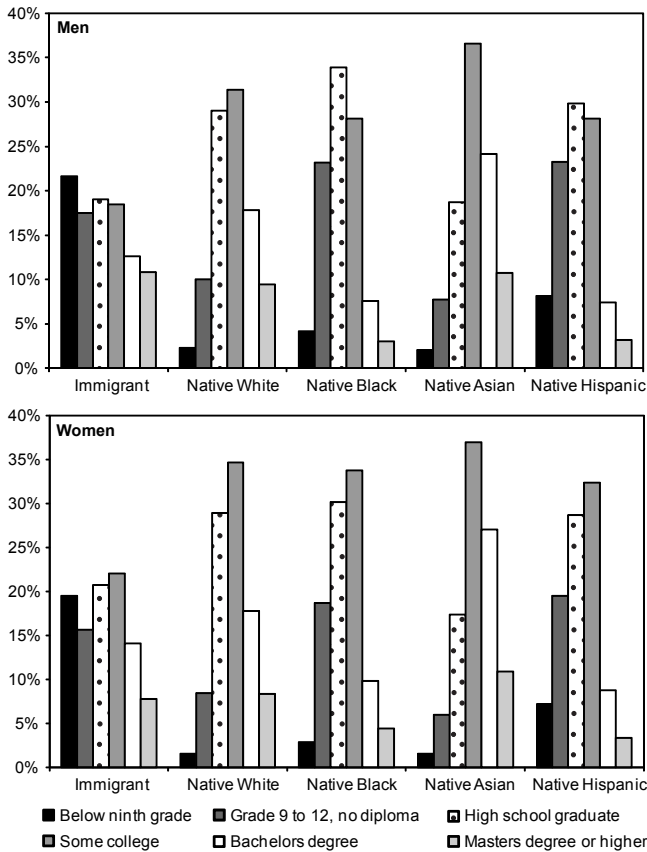


Figure 3. Distribution of Educational Attainment by Immigration Status and by Race/Ethnicity for Adults, 18 to 64 Years of Age, 2000.

We can further examine the amount of overlap in the skill distributions of immigrants and natives by looking at age and education together. We define 54 age-education groups, ranking the groups by average earnings, and identifying those age-education groups that account for the bottom 25 percent, or first quartile, of the skill distribution for natives and for each of the three additional quartiles.⁶ With this breakdown, we then calculate the percentage of each immigrant and native group that falls within each skill quartile. If the percentage for a given group and quartile exceeds 25, the group is overrepresented in that portion of the skill distribution. If the percentage falls below 25, the group is underrepresented.

Figure 4 shows these skill distributions. Immigrant men are heavily overrepresented in the least-skilled quartile and underrepresented in the remainder of the skill distribution. The skill distributions of immigrant women show a similar pattern. These figures suggest that immigrants and natives differ considerably in their skills, a fact that alters our simple theoretical predictions concerning the economic effects of immigrants on native labor market outcomes.

Not only did our simple model assume perfect substitutability of immigrant and native labor, it also assumed that the stock of productive capital was held fixed—that an immigration-induced increase in the nation’s endowment of

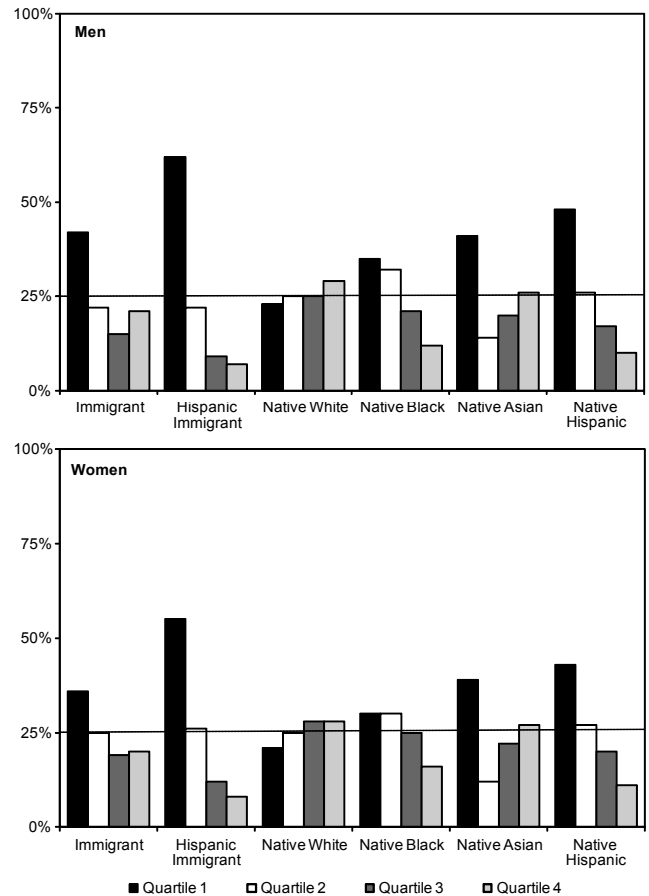


Figure 4. Distribution of immigrant and native born adults across earnings groups based on native population quartiles.

labor does not spur additional net investment on the part of domestic and foreign producers. Capital investment involves the deliberate allocation of resources towards activities that increase the future productive capacity of the economy, such as the addition of a machine or factory. Whether the economy makes sufficient investments to, on net, increase the stock of productive capital will depend on the return to capital, with increasing returns spurring net capital accumulation.

The connection between immigration and capital accumulation is driven by the effect of immigration on these returns. To the extent that immigration increases the nation’s labor supply, each unit of existing capital has more labor to work with, which in turn increases the return to capital investment and the incentive to invest in future productive capacity. The resulting net capital accumulation partially offsets the negative effects of immigration on native wages and employment, by increasing labor productivity (and in turn, wages) and by creating new employment opportunities. The degree of this offset will depend on the responsiveness of capital supply to changes in return as well as underlying technological relationships governing production in the economy. Nonetheless, capital accumulation dulls the wage and employment effects of immigration on natives.

Thus, we began with a simple story in which immigration unambiguously lowers the wages and reduces the employ-

ment of native workers, and then finished with a more nuanced description in which the theoretical predictions are more ambiguous and varied. In our more complex—and more realistic—theoretical discussion, the potential adverse labor market effects of immigration should be greatest for those native-born workers who are most similar in their skills to immigrants. Native groups with sufficiently different skill sets are likely to be least harmed and may even benefit in the form of higher wages and greater employment as a result of an increase in immigrant labor. In addition, capital accumulation in response to an immigrant inflow will, in isolation, benefit all workers by making them more productive. This will partially offset the wage declines for workers who are most similar to immigrants and accentuate the wage increases of complementary natives.

Theoretical predictions regarding the magnitude and size of the effects of immigrants on native wages and employment, and on overall poverty rates, are thus ambiguous. As a result, the question of whether immigration increases or decreases poverty is ultimately an empirical issue. To estimate empirically the contribution of immigration to poverty through labor market competition with natives, we simulate the hypothetical wages that workers of various skill groups would have earned in the year 2005 if the supply of immigrant labor were held to 1970 levels. Using a range of alternative wage estimates we then simulate what personal income, total family income, and poverty rates would have been had the immigrant population been held at 1970 levels.⁷

We perform three simulations that make different assumptions about labor substitutability. The lower-bound estimates assume that immigrants and natives within each skill group are imperfectly substitutable for one another and also assume a fairly high degree of substitutability between workers of different levels of educational attainment. Imperfect substitutability between immigrants and natives concentrates the negative wage effect of immigration on immigrants themselves, and the greater substitutability of workers with different levels of educational attainment allows the effect of immigrant supply increases concentrated among the least skilled to be diffused more evenly across all native-born workers. These two conjoined assumptions lead to estimates of the impact of immigration on native wages that are relatively modest, with small negative effects for high school dropouts only and zero to slight positive effects for all other groups of workers. The upper-bound results assume considerably less substitutability between workers in different education groups, thus concentrating the effect of immigration on those groups most affected. Not surprisingly, these assumptions lead to predicted negative effects on the wages of high school dropouts and more positive impacts on the wages of high school graduates and those with some college.

The final wage simulation assumes limited substitutability between workers of different levels of educational attainment but perfect substitutability between immigrants and natives within skill groups. This simulation yields the largest adverse wage effects for high school dropouts, since per-

fect substitutability between similarly-skilled immigrants and natives transmits a greater share of the supply shock to native workers, while the limited substitutability between workers with different education levels prohibits the shock from spreading out of skill groups most affected by immigration. In all simulations, capital is allowed to accumulate in response to immigration-induced changes in the return to capital.

With these wage simulations, we are able to calculate hypothetical family incomes and poverty rates for households with a native-born head in 2005. For each of the three wage simulations, we calculated two sets of hypothetical poverty rates. The first assumes that higher wages lead to an increase in weeks worked—i.e., labor supply is elastic—thus yielding higher hypothetical family income (and lower hypothetical poverty rates) for those adversely affected by competition with immigrants. The second assumes that labor supply is inelastic, or unresponsive, to changes in weekly wages. When the simulated poverty rate is below the actual poverty rate, the simulation suggests that the 2005 poverty rate for the group in question would have been lower had the immigrant population been held to 1970 levels.

The simulation results by race and ethnicity suggest that immigration over this time period has had negligible effects on poverty overall. By level of educational attainment, we found the largest potential effects on the poverty rates of households headed by someone with less than a high school degree. The simulations suggest a hypothetical 2005 poverty rate (if the immigrant population had remained at 1970 levels) between 0.5 and 1.9 percentage points lower than the actual poverty rate. Again, this is a relatively small impact. For households headed by a native-born person with a high school degree or greater (the overwhelming majority of U.S. households), the effects of immigration on poverty are essentially equal to zero.

Poverty simulation results for households defined by both the race and educational attainment level of the household head, shown in Figure 5, lead to very similar conclusions.⁸ Again, the lowest simulated poverty rates imply only modest impacts of labor market competition with immigrants on native poverty rates for households headed by someone with less than a high school degree and virtually no effects for all other groups. For the lowest-skilled households, the largest poverty effects occur for African Americans and Hispanics. For example, the lowest simulated poverty rate (again, if the immigrant population had been held to 1970 levels) for black households headed by someone with less than a high school degree is 43 percent, 2 percentage points lower than the actual poverty rate for this group in 2005 (45 percent). The comparable figures for low-skilled Hispanic households are 34 percent and 37 percent.

Conclusion

In this analysis, we explored possible connections between immigration to the United States between 1970 and 2005 and the nation's poverty rate. First, we briefly documented

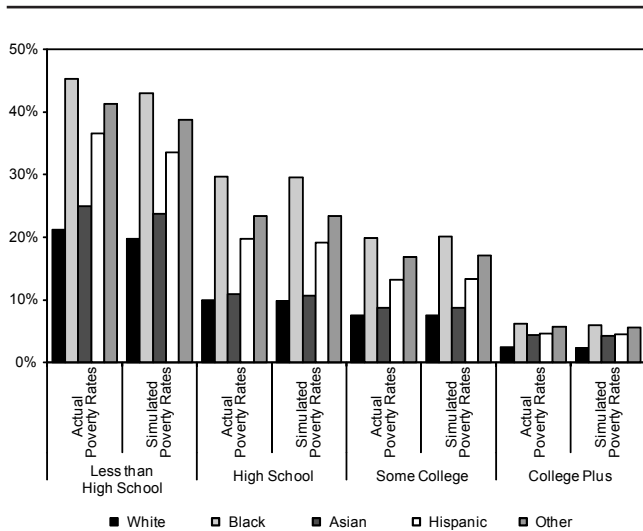


Figure 5. Actual 2005 poverty rates among native-headed households and simulated poverty rates holding immigrant labor supply to 1970 levels by race/ethnicity and educational attainment.

Note: Actual and simulated poverty rates pertain to persons in households where the household head is native-born. Simulation assumes upper bound wage effects, that immigrants and natives are perfect substitutes, and an elastic labor supply (a weeks-worked labor supply elasticity of one).

the increased poverty incidence among immigrants and the connections between the changing national origin mix of the immigrant population and immigrant poverty. We also estimated how poverty rates change within immigrant arrival cohorts as time in the United States increases. Finally, we discussed in detail the avenues through which immigration may affect the wages of the native-born; we simulated the likely wage effects of immigration between 1970 and 2005, and we simulated the consequent effects on native poverty rates.

In the end, it appears that the only substantive contribution of immigration to the national poverty rate occurs through the compositional effects of recent immigrants on the national poverty rate. Recent immigrants from Latin America and Asia tend to experience high initial poverty rates, which certainly increased the overall poverty rate relative to what it would otherwise be. However, this effect is small, and through wage growth and selective out-migration, immigrant poverty declines quickly with time in the United States.

We find little evidence of an effect of immigration on native poverty through immigrant-native labor market competition. Despite adverse wage effects on high school dropouts and relatively small effects on the poverty rates of members of this group, the effects on native poverty rates are negligible, primarily because most native-born poor households have at least one working adult with at least a high school education. ■

²We analyze data from the Integrated Public Use Microdata Samples (IPUMS) collected and maintained by the University of Minnesota. We use the one percent samples from the 1970, 1980, 1990, and 2000 U.S. Censuses of Population and Housing and the 2005 American Community Survey (ACS).

³See the book chapter for an explanation of how the decompositions are calculated.

⁴The discussion in this section draws heavily upon the discussion in S. Raphael and L. Ronconi, "The Effects of Labor Market Competition with Immigrants on the Wages and Employment of Natives," *Du Bois Review* 4, No. 2 (2007): 413–432.

⁵Of course, if immigrants enter the labor market earlier in life because they left school at a younger age, the relative youth of immigrant workers may not translate into lower average years of work experience relative to natives.

⁶We first defined 54 groups based on age and educational attainment. We use the six educational attainment groups defined in Table 1 and the nine age groups, 18 to 25, 26 to 30, 31 to 35, 36 to 40, 41 to 45, 46 to 50, 51 to 55, 56 to 60, and 61 to 64. The interaction of these six educational groups and nine age grouping define 54 age-education cells. We then use the 2000 PUMS data to rank these groups from lowest to highest average earnings among those employed within each group. We use average earnings among native-born, non-Hispanic white men to do these rankings. We use this group to rank age-education groupings into apparent skills groups since white men are the largest sub-groups in the labor market. We exclude other groups and women to abstract from the effects of race, ethnicity, and gender on wages. In other words, we wish to identify a ranking that is more likely to purely reflect average difference in skills. This ranking serves as an indication of skill endowments as they are valued by the market.

⁷We simulate the effects of competition with immigrants on native poverty rates in the following manner. First, we estimate the parameters of a theoretical model that ties the wages of workers of various skill groupings to their own supply and the supply of all other workers. We then use the calibrated theoretical model to simulate the hypothetical wages that workers of various skill groups would earn if the supply of immigrant labor were held to 1970 levels. Using these alternative wage estimates we simulate hypothetical personal income and total family income with restricted immigrant labor supply. Finally, we use these simulated family income levels to simulate what native poverty rates would have been had the immigrant population been held at 1970 levels. Note, these simulations take household composition as given. To the extent that lower wages impact household formation, our simulations may understate the impact on poverty. The theoretical model of wage determination posits that the wages of workers in a given skill level depends inversely on own supply. In addition, a given group's wages also depend on the supply of other workers. The supply of other types of workers can either suppress (when these workers are close substitutes) or increase (when these workers are complementary) the wages for a given skill group, depending primarily on the ease with which employers can substitute workers of different skill levels in producing goods and services.

⁸This figure displays simulated poverty rates for just one of the three wage simulations (using upper-bound wage effects, and assuming immigrant and native are imperfect substitutes), and rates assume an elastic labor supply. This set of assumptions yielded rates that tended to be the most different from actual poverty rates, although all of the simulations produced fairly similar rates. For the full set of simulations, see the book chapter.

⁹This article draws upon "Immigration and Poverty in the United States," in *Changing Poverty, Changing Policies*, eds. M. Cancian and S. Danziger (New York: Russell Sage Foundation, 2009).